

CLAIMS

1. An austenitic-ferritic stainless steel having a metal structure containing ferrite phase and austenite phase, the amount of (C + N) in the austenite phase being in a range from 0.16 to 2% by mass, and the volume percentage of the austenite phase being in a range from 10 to 85%.
2. The austenitic-ferritic stainless steel according to claim 1, having 48% or larger total elongation determined by tensile test.
3. The austenitic-ferritic stainless steel according to claim 1 or claim 2, wherein the stainless steel comprises 0.2% or less C, 4% or less Si, 12% or less Mn, 0.1% or less P, 0.03% or less S, 15 to 35% Cr, 3% or less Ni, 0.05 to 0.6% N, by mass, and balance of Fe and inevitable impurities.
4. The austenitic-ferritic stainless steel according to claim 3, wherein the stainless steel comprises 10% or less Mn, 1 to 3% Ni, by mass, and balance of Fe and inevitable impurities.
5. The austenitic-ferritic stainless steel according to claim 3, wherein the stainless steel comprises 1.2% or less Si, 2% or less Mn, 1% or less Ni, by mass, and balance of Fe and inevitable impurities.

6. The austenitic-ferritic stainless steel according to claim 3, wherein the stainless steel comprises 1.2% or less Si, 4 to 12% Mn, 1% or less Ni, by mass, and balance of Fe and inevitable impurities.

7. The austenitic-ferritic stainless steel according to claim 3, wherein the stainless steel comprises 0.4% or less Si, 2 to 4% Mn, 1% or less Ni, by mass, and balance of Fe and inevitable impurities.

8. The austenitic-ferritic stainless steel according to any of claims 3 to 7, wherein the stainless steel further comprises one or more of 4% or less Mo and 4% or less Cu, by mass.

9. The austenitic-ferritic stainless steel according to any of claims 3 to 8, wherein the stainless steel further comprises 0.5% or less V by mass.

10. The austenitic-ferritic stainless steel according to any of claims 3 to 9, wherein the stainless steel further comprises 0.1% or less Al by mass.

11. The austenitic-ferritic stainless steel according to any of claims 3 to 10, wherein the stainless steel further comprises one or more of 0.01% or less B, 0.01% or less Ca, 0.01% or less Mg, 0.1% or less REM, and 0.1% or less Ti, by mass.

12. An austenitic-ferritic stainless steel showing excellent deep drawability, the stainless steel having austenite and ferrite two-phase structure, and comprising 0.2% or less C, 4% or less Si, 10% or less Mn, 0.1% or less P, 0.03% or less S, 15 to 35% Cr, 1 to 3% Ni, 0.05 to 0.6% N, by mass, and balance of Fe and inevitable impurities, the amount of (C + N) in the austenite phase being in a range from 0.16 to 2% by mass, and the volume percentage of the austenite phase being in a range from 10 to 85%.

13. An austenitic-ferritic stainless steel showing excellent punch-stretchability and crevice corrosion resistance, comprising 0.2% or less C, 1.2% or less Si, 2% or less Mn, 0.1% or less P, 0.03% or less S, 15 to 35% Cr, 1% or less Ni, 0.05 to 0.6% N, by mass, and balance of Fe and inevitable impurities, the percentage of the austenite phase in the metal structure being in a range from 10 to 85% by volume.

14. An austenitic-ferritic stainless steel showing excellent corrosion resistance at welded part, comprising 0.2% or less C, 1.2% or less Si, 4 to 12% Mn, 0.1% or less P, 0.03% or less S, 15 to 35% Cr, 1% or less Ni, 0.05 to 0.6% N, by mass, and balance of Fe and inevitable impurities, the percentage of the austenite phase being in a range from 10 to 85% by volume.

15. An austenitic-ferritic stainless steel showing excellent resistance to intergranular corrosion, comprising 0.2% or less C, 0.4% or less Si, 2 to 4% Mn, 0.1% or less P, 0.03% or less S, 15 to 35% Cr, 1% or less Ni, 0.05 to 0.6% N, by mass, and balance of Fe and inevitable impurities, the percentage of the austenitic phase being in a range from 10 to 85% by volume.

16. The austenitic-ferritic stainless steel according to any of claims 12 to 15, wherein the stainless steel further comprises one or more of 4% or less Mo and 4% or less Cu, by mass.

17. The austenitic-ferritic stainless steel according to any of claims 12 to 16, wherein the stainless steel further comprises 0.5% or less V by mass.

18. The austenitic-ferritic stainless steel according to any of claims 12 to 17, wherein the stainless steel further comprises 0.1% or less Al by mass.

19. The austenitic-ferritic stainless steel according to any of claims 12 to 18, wherein the stainless steel further comprises one or more of 0.01% or less B, 0.01% or less Ca, 0.01% or less Mg, 0.1% or less REM, and 0.1% or less Ti, by mass.

20. The austenitic-ferritic stainless steel according to any of claims 12 to 19, wherein the amount of (C + N) in the austenite phase is in a range from 0.16 to 2% by mass.